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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT PAPER NUMBER

1755

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|                              |  |                                      |  |
|------------------------------|--|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/775,297     | <b>Applicant(s)</b><br>KIM, YONG BUM |  |
|                              | <b>Examiner</b><br>Michael A. Marcheschi | <b>Art Unit</b><br>1755              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as obvious over Benedict et al. (188).

Benedict et al. teach in column 8, lines 20-55, column 15, line 10-column 16, line 50, column 22, lines 30-65 and column 24, lines 32-55, a coated abrasive article produced by (1) forming a preformed coated abrasive (backing (i.e. polyester film) having a make coat, abrasive particles (alumina) adhered to the make coat and a size coated over the abrasive particles) and laminating the preformed coated abrasive to a backing, as defined by the reference, an adhesive (epoxy resin). The preformed coated abrasive is made by conventional techniques (i.e. coating a backing with a make coat, applying abrasive particles thereon, at least partially curing the make coat, applying a

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size coat over the make coat/abrasive particles and at least partially curing. The backing, as defined by the reference, is one that is a resin/fiber blend (see abstract) at this can be laminated to a non woven fabric (see column 24 as defined above).

The reference teaches a method of making an abrasive article which includes all the method steps of claim 1 except the disk shape formation of the substrate and coated abrasive. This, however, is obvious to the skilled artisan depending on the application of the abrasive article. If the application required the abrasive article to be a disk form, the formation of a disk substrate instead of the belt substrate of the reference would have been an obvious modification of the reference. The change in shape of the substrate is not seen to impart patentability because one skilled in the art would have known that the reference method can be used to make used to make other shaped abrasive articles and thus the disk limitation is obvious dependent on the required end. This concept is clearly shown in column 1, lines 45-54 of the reference (background section). The motivation to make this change is apparent from the level of ordinary skill in the art in terms of changes in the shapes of abrasive articles depending on its application. If applicants argue this point, why aren't other shapes of the abrasive article of the reference obvious? In addition, formation of the disk shape prior to combining (laminating) is obvious because this will eliminate waste of the entire abrasive product when compared to cutting the laminated product at the end of the process, thus the efficiency of the process will be increased by elimination of a final cutting step.

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With respect to claims 2-5 and 8 these limitations are clearly defined by the reference. With respect to claim 6, the recitation that the backing, as defined by the reference, is one that is a resin/fiber blend (see abstract) at this can be laminated to a non woven fabric (see column 24 as defined above) and this reads on the laminate of claim 6. With respect to claim 7, although the way to form the laminate is not literally defined, it is the examiners position that one skilled in the art, from the interpretation of forming a laminate, would have known by routine experimentation and/or optimization the temperature and pressure required to form a laminate that is of optimal bonding strength. The claimed laminating technique is therefore well within the scope of the skilled artisan absent evidence to the contrary. Claim 9 is met by the teachings in column 15, lines 10-15 of the reference (i.e. a plurality of fibrous mat structure which encompasses one fiber mat structure on top of the other). With respect to claim 10, as defined above, the formation of an abrasive disk would have been obvious to the skilled artisan using the techniques defined by the reference if the application required a disk. In view of this, the limitations of claim 10 are obvious to the skilled artisan.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as obvious over Champagne.

Champagne teaches in the abstract and column 1, line 8-column 3, line 17, a coated abrasive disk produced by (1) laminating a coated abrasive (backing (i.e. any fibrous backing) having a make coat, abrasive particles (alumina) adhered to the make coat and a size coated over the abrasive particles) to a secondary backing fiber/polymer material). The coated abrasive is made by conventional techniques (i.e. coating a

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backing with a make coat, applying abrasive particles thereon, at least partially curing the make coat, applying a size coat over the make coat/abrasive particles and at least partially curing.

The reference teaches a method of making an abrasive article which includes all the method steps of claim 1 except the disk shape formation of the substrate and coated abrasive. This, however, is obvious to the skilled artisan depending on the application of the abrasive article. If the application required the abrasive article to be a disk form, the formation of a disk substrate and disk coated abrasive would have been an obvious modification of the reference. The change in shape of the substrate and coated abrasive is not seen to impart patentability because one skilled in the art would have found the changes in shape of the substrate and coated abrasive prior to the laminating step obvious for the following reasons. The reference makes a disk shaped abrasive after the laminating step is done, however, the initial formation of a disk substrate and disk coated abrasive prior to this laminating step is an obvious modification thereof. If an abrasive disk is intended to be formed, the shaping of the materials used either prior to or after the laminating step is well within the scope of the skilled artisan. The change in the sequence of shaping is not seen to impart patentability to the claimed invention. The motivation to make this change is apparent from the level of ordinary skill in the art in terms of how to make a shaped abrasive article. If applicants argue this point, why aren't the sequence in which the shape is made obvious? In addition, formation of the disk shape prior to combining (laminating) is obvious because this will eliminate waste of the entire abrasive product when

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compared to cutting the laminated product at the end of the process, thus the efficiency of the process will be increased by elimination of a final cutting step.

With respect to claims 2-5, these limitations are clearly defined by the reference.

Claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Champagne.

The claimed invention is anticipated by the reference because the reference teaches an abrasive disk which comprises the structure of claim 1. Applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as obvious over Klun et al. in view of Champagne

Klun et al. teach in column 17, line 32-column 18, line 5 and column 23,, lines 60-62, a coated abrasive disk produced by (1) forming a coated abrasive (backing (i.e. any non woven) having a make coat, abrasive particles (alumina) adhered to the make coat and a size coated over the abrasive particles), wherein the backing can be laminate of the backing defined above and a similar of more stiffer backing. The coated abrasive is made by conventional techniques (i.e. coating a backing with a make coat, applying

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abrasive particles thereon, at least partially curing the make coat, applying a size coat over the make coat/abrasive particles and at least partially curing.

Although the reference does not literally teach when the second backing can be laminated to the first backing, this aspect is deemed obvious because the sequence of laminating two backings together in the manufacture of an abrasive disk is considered an obvious modification and well within the scope of the skilled artisan. To support the examiners position, Champagne teaches that it is known to laminate a second backing to a coated abrasive article (i.e. contains a first backing). In view of this, any time of lamination would have been within the scope of the skilled artisan. With this being obvious, the reference teaches a method of making an abrasive article which includes all the method steps of claim 1 except the disk shape formation of the substrate and coated abrasive. This, however, is obvious to the skilled artisan depending on the application of the abrasive article. If the application required the abrasive article to be a disk form, the formation of a disk substrate and disk coated abrasive would have been an obvious modification of the reference. The change in shape of the substrate and coated abrasive is not seen to impart patentability because one skilled in the art would have found the changes in shape of the substrate and coated abrasive prior to the laminating step obvious for the following reasons. The reference makes a disk shaped abrasive after the laminating step is done, however, the initial formation of a disk substrate and disk coated abrasive prior to this laminating step is an obvious modification thereof. If an abrasive disk is intended to be formed, the shaping of the materials used either prior to or after the laminating step is well within the scope of the



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skilled artisan. The change in the sequence of shaping is not seen to impart patentability to the claimed invention. The motivation to make this change is apparent from the level of ordinary skill in the art in terms of how to make a shaped abrasive article. If applicants argue this point, why aren't the sequence in which the shape is made obvious? In addition, formation of the disk shape prior to combining (laminating) is obvious because this will eliminate waste of the entire abrasive product when compared to cutting the laminated product at the end of the process, thus the efficiency of the process will be increased by elimination of a final cutting step.

With respect to claims 2-5, these limitations are clearly defined by the reference.

With respect to claim 6, the reference states that the second backing can be a stiffer materials and since a plastic material and a bakelite plate are stiffer materials they are broadly encompassed by the reference. With respect to claim 7, although the way to form the laminate is not literally defined, it is the examiners position that one skilled in the art, from the interpretation of forming a laminate, would have known by routine experimentation and/or optimization the temperature and pressure required to form a laminate that is of optimal bonding strength. The claimed laminating technique is therefore well within the scope of the skilled artisan absent evidence to the contrary. With respect to claims 8 and 9, the textile does not have to be used as the supporting substrate.

Claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Klun et al.

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The claimed invention is anticipated by the reference because the reference teaches an abrasive disk which comprises the structure of claim 1. Applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary.

Claims 6-9 are rejected under 35 U.S.C. 103(a) as obvious over Klun et al. in view of Champagne as applied to claim 1 above and further in view of Benedict.

This rejection is based on the selection of the laminate as the secondary backing.

The primary reference teaches that the secondary backing can be a more stiffer backing and it is the examiners position that this makes any conventionally known backing obvious as long as it is stiffer than a known woven. Since the laminates of claim 6 are known backings (see Benedict) and they are more stiffer than non wovens (due to the laminated structure at least), the use of these backings as the second backing according to the primary reference is obvious. The motivation to use this is that the primary reference implies that any stiffer backing can be used. With respect to claim 8, these limitations are clearly defined by Benedict. With respect to claim 7, although the way to form the laminate is not literally defined, it is the examiners position that one skilled in the art, from the interpretation of forming a laminate, would have known by routine experimentation and/or optimization the temperature and pressure required to form a laminate that is of optimal bonding strength. The claimed laminating

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technique is therefore well within the scope of the skilled artisan absent evidence to the contrary. Claim 9 is met by the teachings in column 15, lines 10-15 of Benedict (i.e. a plurality of fibrous mat structure which encompasses one fiber mat structure on top of the other).

Claims 1-7 are rejected under 35 U.S.C. 103(a) as obvious over Bland et al. in view of Champagne.

Bland et al. teach in column 3, lines 35-40 and column 7, line 5-column 10, line 15, a coated abrasive disk produced by (1) forming a coated abrasive (backing (i.e. polyester film) having a make coat, abrasive particles (alumina) adhered to the make coat and a size coat over the abrasive particles), wherein the backing can be laminate of the backing defined above and a second backing (i.e. a mixture of a non woven and a cloth (i.e. polyester yarns (textile))). The coated abrasive is made by conventional techniques (i.e. coating a backing with a make coat, applying abrasive particles thereon, at least partially curing the make coat, applying a size coat over the make coat/abrasive particles and at least partially curing.

Although the reference does not literally teach when the second backing can be laminated to the first backing, this aspect is deemed obvious because the sequence of laminating two backings together in the manufacture of an abrasive disk is considered an obvious modification and well within the scope of the skilled artisan. To support the examiners position, Champagne teaches that it is known to laminate a second backing to a coated abrasive article (i.e. contains a first backing). In view of this, any time of

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lamination would have been within the scope of the skilled artisan. With this being obvious, the reference teaches a method of making an abrasive article which includes all the method steps of claim 1 except the disk shape formation of the substrate and coated abrasive. This, however, is obvious to the skilled artisan depending on the application of the abrasive article. If the application required the abrasive article to be a disk form, the formation of a disk substrate and disk coated abrasive would have been an obvious modification of the reference. The change in shape of the substrate and coated abrasive is not seen to impart patentability because one skilled in the art would have found the changes in shape of the substrate and coated abrasive prior to the laminating step obvious for the following reasons. The reference makes a disk shaped abrasive after the laminating step is done, however, the initial formation of a disk substrate and disk coated abrasive prior to this laminating step is an obvious modification thereof. If an abrasive disk is intended to be formed, the shaping of the materials used either prior to or after the laminating step is well within the scope of the skilled artisan. The change in the sequence of shaping is not seen to impart patentability to the claimed invention. The motivation to make this change is apparent from the level of ordinary skill in the art in terms of how to make a shaped abrasive article. If applicants argue this point, why aren't the sequence in which the shape is made obvious? In addition, formation of the disk shape prior to combining (laminating) is obvious because this will eliminate waste of the entire abrasive product when compared to cutting the laminated product at the end of the process, thus the efficiency of the process will be increased by elimination of a final cutting step.

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With respect to claims 2-5, these limitations are clearly defined by the reference. With respect to claim 6, the recitation that the second backing can be a mixture of a non woven and a cloth (i.e. polyester yarns (textile))) reads on the laminate of claim 6. With respect to claim 7, although the way to form the laminate is not literally defined, it is the examiners position that one skilled in the art, from the interpretation of forming a laminate, would have known by routine experimentation and/or optimization the temperature and pressure required to form a laminate that is of optimal bonding strength. The claimed laminating technique is therefore well within the scope of the skilled artisan absent evidence to the contrary.

Claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bland et al.

The claimed invention is anticipated by the reference because the reference teaches an abrasive disk which comprises the structure of claim 1. Applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. In re Thorpe 227 USPQ 964. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

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A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. In re Opprecht 12 USPQ 2d 1235, 1236 (CAFC 1989); In re Bode USPQ 12; In re Lamberti 192 USPQ 278; In re Bozek 163 USPQ 545, 549 (CCPA 1969); In re Van Mater 144 USPQ 421; In re Jacoby 135 USPQ 317; In re LeGrice 133 USPQ 365; In re Preda 159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See In re Van Marter, 144 USPQ 421.

A generic disclosure renders a claimed species prima facie obvious. Ex parte George 21 USPQ 2d 1057, 1060 (BPAI 1991); In re Woodruff 16 USPQ 2d 1934; Merk & Co. v. Biocraft Lab. Inc. 10 USPQ 2d 1843 (Fed. Cir. 1983); In re Susi 169 USPQ 423 (CCPA 1971).

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see In re Malagari, 182 U.S.P.Q. 549; In re Wertheim 191 USPQ 90 (CCPA 1976).

Evidence of unexpected results must be clear and convincing. In re Lohr 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. In re Linder 173 USPQ 356.

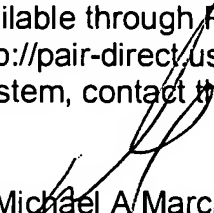
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Michael A. Marcheschi  
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Art Unit 1755